GSP-9330 with GKT-008 : Trace Math Operation

GW INSTEK
Simply Reliable

Offset operation excluding ambient noise

The near field probe is the same as the antenna.

Unless in a shielded environment, noise measurement involves a lot of environmental noise (radio, terrestrial TV, WiFi, etc.). If noise is observed to some extent steadily, it is possible to offset the two trace differences using the calculation function.

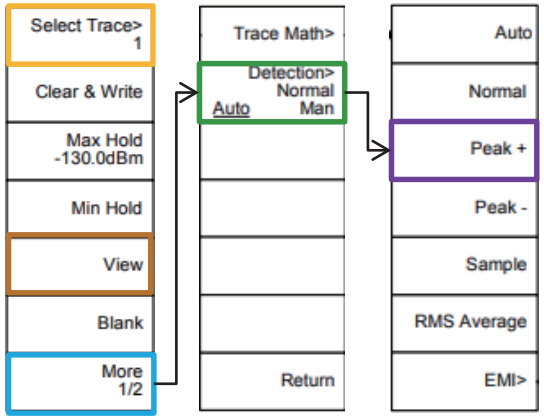
it is recommended to use the Narrow Band method to confirm whether other signals are mixed in before doing this math function.

procedure

1. Adjust the detector mode of three traces. (Normal, +Peak, etc.)
2. Stop the waveform with trace 1 (or trace 2) only measuring ambient noise. (VIEW mode)
3. Set Trace 2 (or Trace 1) to Clear & Write (Continuous Update).
4. With trace 3 displayed, calculate trace 1 and trace 2. * Trace 3 is the calculation result.

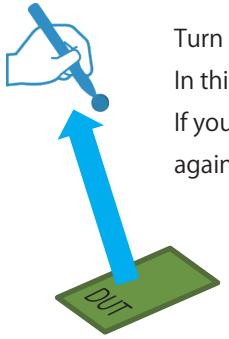
Trace

Press the [Trace] key and select trace 1 from [Select Trace].



Press [More 1/2] to move to the next page, select "Detection" and select "Peak +".

Power Off the DUT or Far enough away from the DUT.

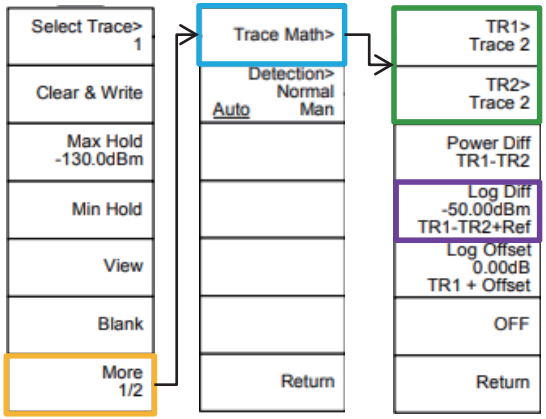


Turn off the power of the DUT, or Move the probe far enough away from the DUT.
In this state, press the [Trace] key and select [View] to stop updating trace 1.
If you pick up the noise that you think is not steady environmental noise, set it again to [Clear & Write] and select [View]

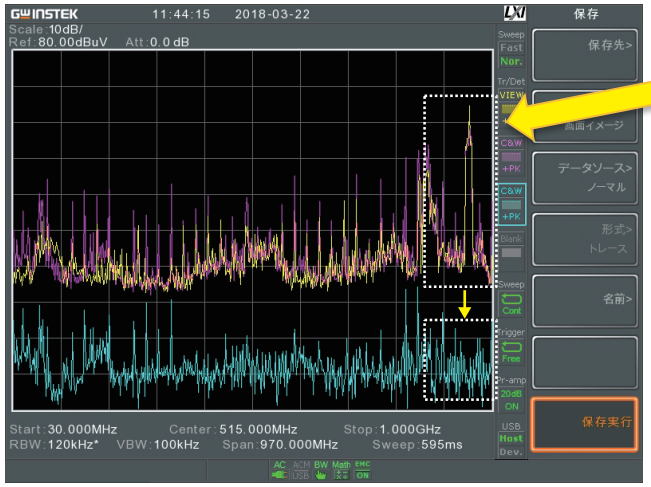
Select Trace 2 from the [Trace] key and select [Peak +] as in Trace 1.
* In the initial setting state, trace 2 is set to [Clear & Write]. In the same way, display trace 3 and select [Peak +] for trace 3 in the same procedure.

Trace Math function

Press [More 1/2] on the [Trace] menu, select [Trace Math], and set [TR1] and [TR2].



For example, set TR1 to trace 2 and TR2 to trace 1. Then, pressing [Log Diff] will display TR1 - TR2 + Ref calculation result for trace 3.
※ Ref value can be entered directly with 10 keys.
For ease of viewing, set a reasonable value so that the spectrum does not overlap as shown below.



Attention to steady signals around 800 ~ 900 MHz!

The above image will be actual measurement results actually tested inside the company.
Ambient noise is yellow (Trace 1), violet (Trace 2) is near the test DUT (+ ambient noise), and blue (Trace 3) is the difference. In yellow and purple, radio waves of base stations of cellular phones are observed to be large in the vicinity of 900 MHz. However, in blue (difference) it disappears and the measurement result in the state where ambient noise is canceled to some extent is displayed.